Chicago Metropolitan Agency for Planning

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MEMORANDUM

To: Transportation Committee

Date: April 17, 2009

From: Ross Patronsky, Senior Planner

Re: *GO TO 2040* Capital Program Element – Evaluation Measures

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At the last Transportation Committee meeting a draft set of evaluation measures was reviewed with the committee. Since that time it has been discussed with the CMAP working committees and posted on the *GO TO 2040* website.

Attached for your review and discussion are the evaluation measures as they have developed since that meeting.

Originally, twenty-seven draft measures were proposed. These have been reduced to fifteen measures that still address the Regional Vision and federal planning factors. Twelve measures are not recommended for use as capital project evaluation measures, mostly because they duplicate other, more effective measures. The measures that are not recommended are shown in an attached table.

The measures under consideration have data sources and methods recommended to implement them. The sources have been selected based on their availability to the agency and their robustness in making the necessary computations. These sources include the travel demand model, developed at CMAP and its predecessor agencies over a number of years, air quality models developed by the U.S. Environmental Protection Agency, and TREDIS, the "Transportation Economic Development Impact System" recently acquired by CMAP for the *GO TO 2040* analysis.

The methods have been selected on their applicability to the measure and their anticipated ability to distinguish between alternative scenarios. In most cases, they are quantitative values generated by one of the models available to CMAP. In a few cases, they are qualitative values, either a narrative discussion of the project or system's impact, or yes/no indicators.

Although these measures will be applied to individual projects as appropriate, their primary use will be in evaluating the impact of transportation projects that make up a system with respect to the preferred scenario. This scenario analysis will begin in the fall.

The measures will continue to be refined; a final list of measures will be brought to the Transportation Committee in May, and a recommendation for endorsement will be sought at that time. Endorsement is scheduled to be requested from the MPO Policy Committee in June and the CMAP Board in July. At that time, updated descriptions of candidate major capital projects will also be in hand for evaluation based on the adopted measures.

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Chicago Metropolitan Agency for Planning

GO TO 2040 Major Capital Program Element

Potential Evaluation Measures

Updated April 17, 2009

Measure	Case Studies					CMAP Indicator(s)	FHWA Planning Factor(s)	Data Source	Method
	Boston	Baltimore	Los Angeles	San Francisco	Portland				
Long-Term Economic Development, Including Freight System		X		X	X	EC 1, EC 2, EC 4, EC 5, He 3, R 1, Tr 1	1	TDM, TREDIS	estimated jobs, income and output
Safety Features	X	X	X	X		He 6, S 7, Tr 7	2	Descrip-tion	project as described addresses safety concerns (yes/no)
Security Features			X			He 6, S 7	3	Descrip-tion	project as described addresses security concerns (yes/no)
Congestion - Targeted Facilities or Corridors	X		X		X	EC 5, Tr 1, Tr 2	4, 6	TDM	vehicle hours of travel under congested conditions - within identified corridor
Congestion - System	X	X	X		X	EC 5, Tr 1, Tr 2	4, 6	TDM	vehicle hours of travel under congested conditions
Transit Service Area		X		X	X	EC 5, Ho 1, R 1, Tr 3	4, 6	GIS	population within buffered area around transit facilities
Provision of Bicycle and Pedestrian Facilities				X	X	He 4, Tr 3, Tr 9	4, 6	Descrip-tion	project as described addresses bicycle and pedestrian accommodation (qualitative)
Mode Share (Travel by Mode)		X			X	Tr 2, Tr 4	4, 6	TDM	trips by mode
Jobs-Housing Access		X	X		X	EC 5, Ho 1, R 1, Tr 9	4, 6	TDM, GIS	number of jobs within specified travel times
Air Quality	X	X	X	X	X	ENR 1, He 4, Tr 9	5	TDM, MOBILE	conformity - emissions estimates
Energy Consumption and Greenhouse Gas Emissions						EC 5, ENR 5, ENR 6, Tr 6, Tr 9	5	TDM, MOVES	MOVES model - estimate of GHG emissions
Preservation of Natural Resources, Land Consumption	X	X			X	ENR 4, ENR 7, R 4	5	TDM, GIS	amount of sensitive or undeveloped lands in areas where project directs growth
Support for Infill Development and Existing Densely-Developed Areas	X			X	X	ENR 4, R 1	5, 8	TDM, GIS	amount of infill potential and current density in areas where project directs growth
Mutual Consistency Between Regional and Sub-Regional Plans	X					Coord	5	Plans	Sponsor documentation of support for project in sub-regional land-use and transportation plans
Peak Period Utilization/Demand	X	X	X	X	X	Tr 4	7	TDM	volume/capacity ratios at peak hours

Overall Effectiveness of Fiscally-Constrained Scenarios will be Evaluated
Overall Distribution of Environmental Burdens and Benefits for Scenarios will be Evaluated

CMAP Indicator Key:

Coord	Coordinated Planning and Government (note that indicators in this area are not yet determined)
EC	Economic Competitiveness
ENR	Environment and Natural Resources
He	Health
Ho	Housing
R	Reinvestment
S	Safety and Security
Tr	Transportation

The full list of indicators is available online at:
http://www.goto2040.org/indicators.aspx

Data Source Abbreviations

TDM	Travel Demand Model
GIS	Geographic Information System
MOBILE	MOBILE 6.2 emissions model
MOVES	MOVES emissions model (not yet released)
TREDIS	Transportation Economic Development Impact System

FHWA Planning Factors

§ 450.306 Scope of the metropolitan transportation planning process.

(a) The metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following factors:

(1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
(2) Increase the safety of the transportation system for motorized and non-motorized users;
(3) Increase the security of the transportation system for motorized and non-motorized users;
(4) Increase accessibility and mobility of people and freight;
(5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
(6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
(7) Promote efficient system management and operation; and
(8) Emphasize the preservation of the existing transportation system.

GO TO 2040 Capital Program Element
Draft Evaluation Measures Not Recommended

Measure	Reason for not recommending
Delays	Not recommended – congestion is a more meaningful and calculable measure.
Amount of Service Provided	Not recommended – service level is a model input, not a result. Will use transit service area and mode share measures to evaluate transit service provided instead.
Travel Time/Speed	Not recommended – transit speeds are constrained by ambient traffic speed (for bus service), or operating characteristics for exclusive right of way. Highway speed and congestion are highly related.
Ridership	Combined with Mode Share measure.
Network Completeness	Not recommended – does not specifically address Regional Vision and determination of what constituted a complete network was problematic.
Facility Condition (3 measures)	Not recommended – maintenance/reconstruction will be dealt with in the plan narrative. (Most projects of this type do not qualify as major capital projects in any case.)
Accident Frequency and Severity	Not recommended – will use Safety Features measure to account for system safety instead. (Transportation modeling does not estimate accident numbers).
Density of Nearby Land Use	Combined with Support for Infill Development measure.
Preservation of Open Space; Conservation of Undeveloped Land	Combined with Preservation of Natural Resources measure.
Economic Impact on Freight System	Combined with Long-Term Economic Development measure.